

RM-9147

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BY HAND DELIVERY

Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Re: *Amendment of Parts 2.106 and 25.202 of the Commission's Rules to Permit
Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial
Systems in the 10.7-12.7 GHz, 12.75-13.25 GHz, 13.75-14.5 GHz, and 17.3-17.8
GHz Bands, and to Establish Technical Rules Governing NGSO FSS Operations
in these Bands*

Dear Mr. Caton:

Please find enclosed for filing an original and four copies of Teledesic Corporation's
comments in the above-referenced proceeding.

Also included is an additional copy of this filing to be date-stamped and returned with our
messenger. Please contact me if you have any questions regarding this matter.

Respectfully submitted,


Kent D. Bressie

Enclosures

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AUG 27 1997

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C.

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of

Amendment of Parts 2.106 and 25.202 of the Commission's Rules to Permit Operation of NGSO FSS Systems Co-Frequency with GSO and Terrestrial Systems in the 10.7-12.7 GHz, 12.75-13.25 GHz, 13.75-14.5 GHz, and 17.3-17.8 GHz Bands, and to Establish Technical Rules Governing NGSO FSS Operations in these Bands

RM No. _____

COMMENTS OF TELEDESIC CORPORATION

Teledesic Corporation hereby supports the request of Skybridge L.L.C. for a rulemaking on the subject of non-geostationary orbit ("NGSO") fixed satellite service ("FSS") operation in the above-referenced portions of the Ku band.¹ Teledesic is not licensed to operate in any of the relevant frequencies, and therefore takes no position on whether the rule changes proposed by Skybridge are appropriate for the Ku band. Teledesic believes, however, that the issue of how best to accommodate evolving NGSO FSS technologies deserves careful consideration in each band where NGSO FSS operations are proposed, and a rulemaking will provide the best forum for Skybridge and other interested parties to fully explore the implications of Skybridge's proposed use of the Ku band for NGSO FSS operations.

¹ Petition for Rulemaking of Skybridge L.L.C. (filed July 3, 1997) ("Skybridge Petition").

Teledesic is licensed to construct, launch, and operate an NGSO FSS system with service links in the 18.8-19.3 GHz and 28.6-29.1 GHz bands.² The Teledesic Network will provide switched, broadband network connections through service partners in host countries worldwide, from the largest urban centers to the most remote villages.

Teledesic applied for its license in early 1994, proposing the first commercial NGSO FSS network in the world. The international regulatory structure in place at that time was designed around traditional geostationary satellite orbit ("GSO") technology. The burden of sharing between NGSO and GSO systems was to be borne entirely by NGSO systems, in all bands and at all times.

In 1995, however, both the FCC and the 1995 World Radiocommunication Conference ("WRC-95") embarked on a new course, starting with the frequencies in the "Ka band" (17.7-20.2 GHz and 27.5-30.0 GHz). Although they differed in some respects, both the FCC's band plan for these frequencies³ and the WRC-95 resolution identifying a portion of the band for NGSO FSS operations⁴ began to treat NGSO FSS operations on an equal footing with GSO FSS systems, at least insofar as "new" FSS bands are concerned. As new NGSO FSS proposals have been filed in the Ka band and in even higher frequencies, Teledesic has consistently supported the

² *Teledesic Corp.*, 12 F.C.C. Rcd. 3154 (Int'l Bur. 1997).

³ *Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Service*, FCC 96-311 (July 22, 1996) (adopting band plan proposed in July 1995), 61 Fed. Reg. 39425 (Aug. 28, 1996).

⁴ Resolution 118, Final Acts of the World Radiocommunication Conference (Geneva 1995).

principle that the sharing burden must be shared in these “new” bands: Some spectrum should be designated primarily for GSO use, and other spectrum should be designated primarily for NGSO use, thus providing at least some spectrum where each system type can realize its full potential. This does not mean that the other type of system cannot share operations in the bands where its service is not designated on a primary basis, only that it must protect the primary service.

The logic behind this principle is as simple as it is compelling. Both GSO and NGSO satellites have certain capabilities not shared by the other.⁵ There are methods, or combinations of methods, that could be employed to make it *theoretically* possible for GSO and NGSO networks to share the same frequencies. Any approach to GSO-NGSO sharing, however, imposes significant burdens on one or both of the services, often raising the cost and complexity, degrading the quality of service, and limiting flexibility and innovation. Moreover, all of the mitigation techniques investigated to date place the burden of sharing squarely upon one service or the other. Given that the burden of sharing must fall predominantly on one type of system or

⁵ For example, GSO systems offer wide “footprints” that make them much more useful for broadcast-type applications than NGSO satellites. However, service from GSO systems suffers in extreme latitudes due to the very low elevation angles necessary to access an equatorial satellite, and the high transmission delay inherent in communications through GSO satellites results in a degraded service quality for many interactive applications. NGSO systems, because of their architecture, can remedy both these problems and thus act as the perfect complement to GSO systems. Because NGSO satellites move in relation to the Earth’s surface, continuous coverage of any one point on Earth requires, essentially, continuous coverage of *all* points on Earth. Because NGSO systems are inherently global, they will provide the same quality and quantity of service to all areas of the world, including those places to which it would be uneconomical to extend service for its own sake. Similarly, the much lower altitudes at which NGSO systems orbit make it possible for such systems to operate at lower power than GSO systems, and to complete each link with much less “latency” or delay.

the other, simple fairness requires that the FSS sharing burden be equitably shared between GSO and NGSO systems.

The point highlighted by the Skybridge Petition is that the desirability of imposing a given set of sharing conditions may vary from band to band. In “new” bands where neither service has yet established itself, the most sensible approach is to give primacy to each technology in at least some sub-bands. That approach allows all the people of the world to reap the benefits of both technologies without constraining the flexibility of either. In “old” bands such as the C and Ku bands, where GSO systems are already fully deployed, it is no longer possible to set aside particular sub-bands for NGSO FSS operations. It does not follow, however, that NGSO systems should be entirely foreclosed in “old” bands. Indeed, just as the Commission’s band plan for the Ka band permits secondary NGSO FSS operations in GSO FSS spectrum and vice versa, it might well be in the public interest to permit secondary NGSO FSS operations in the Ku band.

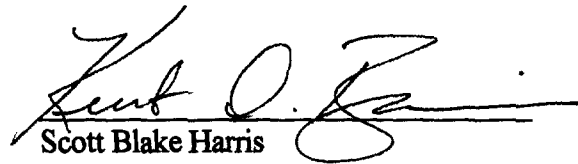
This is the most distinctive feature of the Skybridge proposal. Skybridge proposes to implement an NGSO FSS system in a band already congested with GSO systems, taking onto itself the burden of sharing with GSO systems and accepting the consequences this will have on Skybridge’s cost and quality of service. If it works as Skybridge claims, it may be the best solution available in the Ku band.

Teledesic expresses no view as to whether the Skybridge proposals will adequately protect both Skybridge and GSO systems from harmful interference without unduly constraining the future operations of either; that is a question for Ku-band operators to answer. In fact, Teledesic

neither supports nor opposes any particular rule proposed by Skybridge.⁶ Teledesic strongly believes, however, that adequate regulatory provision for NGSO FSS technology must be made, and should be explored in the Ku band if possible.

Respectfully submitted,

TELEDESIC CORPORATION

A handwritten signature in dark ink, appearing to read "Kent D. Bressie", is written over a horizontal line.

Scott Blake Harris

Mark A. Grannis

Kent D. Bressie

GIBSON, DUNN & CRUTCHER, LLP

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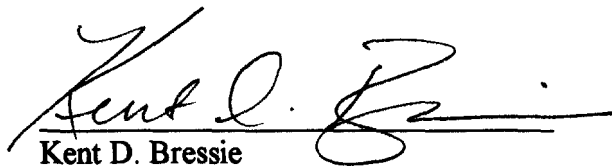
Dated: August 27, 1997

⁶ Skybridge Petition at 17.

CERTIFICATE OF SERVICE

I, Kent D. Bressie, do hereby certify that a copy of the foregoing Comments of Teledesic Corporation has been sent by hand delivery on this 27th day of August, 1997 to the following:

Phillip L. Spector
Paul, Weiss, Rifkind, Wharton & Garrison
1615 L Street, N.W.
Washington, D.C. 20036-5694


Kent D. Bressie